US Army Corps
of Engineers
Great Lakes and Ohio River Division
LOUISVILLE DISTRICT / HUNTINGTON DISTRICT

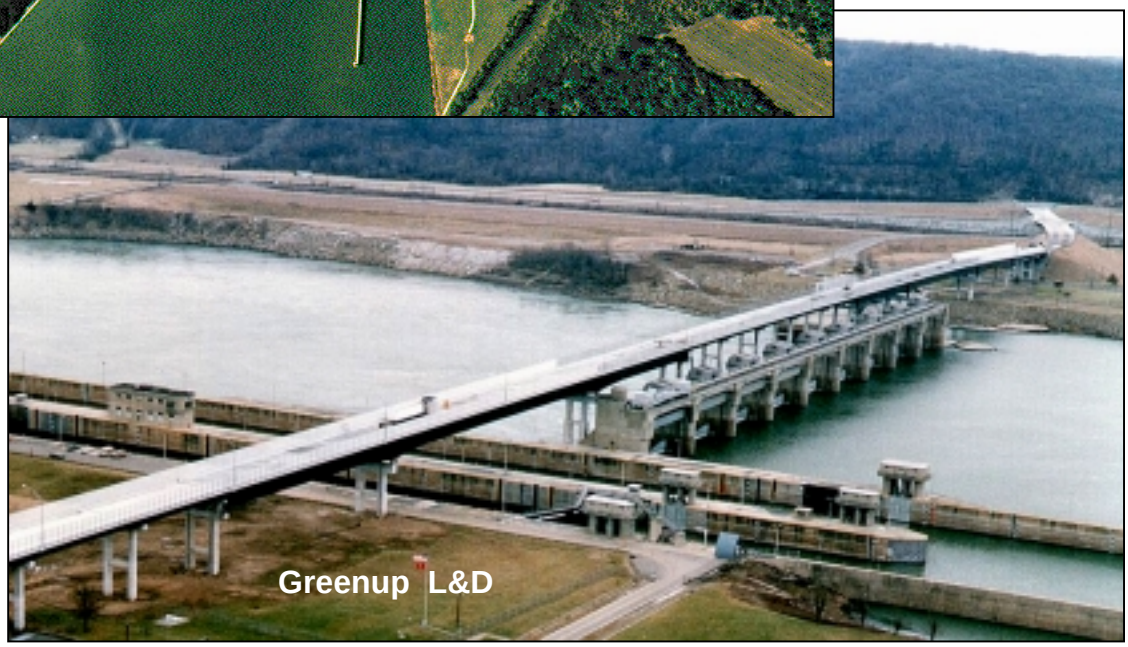
Ohio River Mainstem Systems Study (ORMSS)

Interim Feasibility Report:
J.T. Myers and Greenup Locks Improvements

INDIANA, KENTUCKY and OHIO

Document RE:

Real Estate Appendix



April 2000

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE, KENTUCKY 40201-0059

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OHIO RIVER MAINSTEM SYSTEMS STUDY
Interim Feasibility Report: J.T. MYERS & GREENUP LOCKS IMPROVEMENTS

Document RE:

REAL ESTATE APPENDIX

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SECTION 1

PURPOSE OF REPORT

The primary purpose of the Ohio River Main Stem Systems Study (ORMSS) is to identify the best long-term agenda for maintaining a viable navigation system on the main stem of the Ohio River. Specifically, the study is evaluating the Operation and Maintenance, Major Maintenance, Major Rehabilitation and New Construction investment needs for the 19 navigation locks and dams on the Ohio River Main Stem – with an aim to identify the optimum plan for meeting these needs over the next 40-50 years. (Currently, there are 20 locks and dams; after completion of Olmsted L&D circa 2006, there will be 19). These structures are crucial to the orderly development of navigation throughout the Ohio River Basin. As traffic grows through the Ohio River Valley, several lock structures will experience increasing delays; these delays may be particularly severe during times of maintenance (when one of the existing chambers at any one of the facilities must be closed for routine or emergency repairs or accidents). Other locks will become increasingly unreliable due to age and cycles of use.

More specifically, the study is considering economic, social, and environmental impacts of both large-scale investments and small-scale navigation improvements. For example, large-scale improvements would involve any of the following:

- the lengthening of existing 600' chambers so as to provide at least two 1200' chambers where justified,
- construction of a third lock chamber at certain Ohio River lock facilities, or
- provision of replacement locks and dams at older facilities (such as Emsworth, Dashields, or Montgomery L&Ds).

Smaller-scale improvements generally less than $10 million in capital costs (per site), are also being considered -- some as part of the Without-Project Condition (where authority for construction already exists) and some for With-Project plans. Small-scale concepts include:

- installation of permanent mooring buoys or cells near lock approach points (which could enhance tow mooring in queuing situations and possibly speed up double-cut processing);
- lengthening of guide or guard walls to improve lock approach times;
- provision of spare lock gates, and new maintenance procedures to speed-up lock maintenance, and
- other infrastructure or procedural opportunities which have been identified.

All of these needs and solutions will be discussed in a final ORMSS report. However, due to pressing needs at J.T.Myers and Greenup Locks, this Interim Report has been prepared to recommend certain authorizations in advance of the final ORMSS report.

INTERIM REPORT

The ORMSS final report is intended to be an authorization document for near-term needs (over the near 10-15 years) and a Master Plan for long-term needs. During the course of the study, a clear justification was found for authorization of large scale improvements at two Ohio River facilities – namely J.T.Myers Locks & Dam (L&D), and Greenup L & D. This Real Estate Appendix is part of an Interim Report to provide the justification and rationale for proceeding to Congressional authorization for these improvements.

In terms of both traffic levels and delays, the two projects which are the focus of this report, J.T.Myers and Greenup Locks & Dams, are the two busiest lock projects on the Ohio River for which major improvements are not *already* underway or authorized. Currently, improvements are already underway (or authorized) at the following sites:

- Byrd Locks and Dam (formerly Gallipolis L&D) – new lock chambers were completed in 1995. Work is still underway to complete repairs to portions of the dam, so it will function properly over the next 50 years.
- Olmsted Locks and Dam – now under construction near Olmsted, Illinois – to replace two very old structures, L&D 52 and L&D 53.
- McAlpine Locks and Dam – construction has begun on one of the oldest components of the system, namely the existing 70-year old landside 600-foot chamber, with a new 1200-foot lock chamber.

Second only to Smithland L&D, which is located about 80 miles downstream of Myers, Myers L&D is the second busiest lock in the U.S. in terms of traffic volume. However, Smithland L&D has two 1200-foot long locks to efficiently process long commercial tows, as will the new Olmsted project now under construction. Myers L&D has only one 1200-foot chamber, which is in use round-the-clock, and a smaller 600-foot auxiliary lock. Both Myers and Smithland are located on the lower end of the Ohio River, between important navigable tributaries – the Green River (of Kentucky) located upstream, and the Cumberland and Tennessee River, which enter the Ohio River downstream. Much of the long-distance shipments destined to or from more southern states (or international shipments coming throughout the port of New Orleans on the Mississippi) use J.T.Myers Locks.

Greenup is the third busiest lock in the U.S. in terms of traffic volume. It is located on the Ohio downstream of the mouth of the Kanawha River (of West Virginia). The Kanawha River is a major source of high quality coal. A significant amount of coal passes through Greenup Locks on its way to downstream power plants in Kentucky, Ohio, and Indiana. Like Myers L&D, Greenup has one 1200-foot long lock chamber, and a smaller 600' auxiliary lock. The proposed plan for both projects includes lengthening the auxiliary lock chamber to 1200 feet.

In accordance with Chapter 12 of ER 405-1-12, this Real Estate Appendix is being submitted as Document RE of the Interim Feasibility Report for the J.T. Myers and Greenup Locks Improvements for approval. This Real Estate Appendix is to be considered tentative in nature and for planning purposes only. Both the final real property acquisition line and the estimate of cost are subject to change, even after this report is approved. Pursuant to Chapter 12 of ER 405-1-12, supplemental Real Estate Design Memorandums will be prepared and submitted for approval for each project during the PED phase of these projects.

This Real Estate Appendix is divided into two parts. Part A. covers the real estate requirements for the proposed improvements at J.T. Myers Locks and Dam. Part B covers the real estate requirements for the proposed improvements at Greenup Locks and Dam.

SECTION 2

REFERENCES

J.T. MYERS L&D

DESIGN MEMORANDUM NUMBER	TITLE	APPROV. DATE
1A	Real Estate Requirements for Cannelton, Newburgh & Uniontown Pools (Mooring Facilities)	7 Dec 73
6	Real Estate Required for Construction Area and Supplement to DM No. 6	15 Dec 70
6A	Real Estate Required for Construction Area (Abutment Side)	26 Aug 70
Supplement No. 1 to 6A	Letter Form to Memorandum No. 6A Real Estate Required for Back Channel	26 Aug 70
6B	Real Estate Interests Segments 8 through 12	11 Dec 74
6C	All Real Estate Requirements in Indiana Not Previously Covered	2 Feb 71
6D	Real Estate Requirements for Two Embayment Areas and Two Access Sites in Kentucky	11 Dec 74
6E	Real Estate Requirement to Complete Project (Segment 2)	19 Mar 73
6F	Real Estate Requirements for Substitute Public Access Sites	13 Feb 74
6G	Real Estate Requirements for Water Treatment Plant (Segment 2)	18 Feb 77
6H	Real Estate Requirements for Atkinson Park Boat Ramp (Segment 14)	2 Oct 79
Supplement No. 1 to 6H	Letter Form to REDM No. 6H Additional Acquisition at Atkinson Park Public Access Site	19 Nov 84
RE Appendix – Part A	**Interim Feasibility Report: J.T. Myers and Greenup Locks Improvements**	**This Report**
Supplement No. 2 to 6A	Supplement No. 2 to REDM No. 6A, Real Estate Requirements to 1200’ Lock Extension	To be Submitted

GREENUP L&D

DESIGN MEMORANDUM NUMBER	TITLE	APPROV. DATE
3	Real Estate Construction Area - Locks	Sep 1956
10	Real Estate Construction Area - Abutment Site	May 1956
22	Real Estate Flowage Easement -Segments A & B	Apr 1958
26	Real Estate Flowage Easement -Segments C, D, E	Oct 1958
28	Real Estate Flowage Easement -Segments N, O, P, Q	Dec 1958
29	Real Estate Flowage Easement -Segments F, G, H, I, J, K, KK, L	May 1959
33	Real Estate Flowage Easement -Segments M, R, S, T, U, V, W, X, Y, Z, AA, BB, CC, DD, EE, FF, GG, HH, II, JJ, LL	Jan 1960
36	Real Estate Radio Relay Site	Aug 1964
Supplement 1 to DM 28	Supplement No. 1, Real Estate Requirements for Disposal of Dredge Material, Big Sandy River	Oct 1976
Supplement 2 to DM 28	Supplement No. 2, Real Estate Requirements for Disposal of Dredge Material, Big Sandy River	Jul 1977
Supplement 3 to DM 28 & 33	Supplement No. 3, Real Estate Requirements for Disposal of Dredge Material, Big Sandy River	Apr 1978
Appendix RE - Part B	**Interim Feasibility Report: J.T. Myers and Greenup Locks Improvements**	**This Report**
Supplement 1 to DM 3	Supplement No. 1 to DM 3, Real Estate Requirements for Extension of the Auxiliary Lock Chamber	To be Submitted

SECTION 3

AUTHORITY

The basic authority for the Ohio River Main Stem Study, is contained in the resolution adopted by the Committee on Public Works of the United States Senate dated 16 May 1955:

> Resolved by the Committee on Public Works of the United States Senate, that the Board of Engineers for Rivers and Harbors created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby requested to review the reports on the Ohio River published in House Document No. 306, Seventy-fourth Congress, First Session, House Committee on Flood Control Document No. 1, Seventy-fifth Congress, First Session, and related reports, with a view to determining whether any modifications in the present comprehensive plan for flood control and other purposes in the Ohio River basin is advisable at this time.

Further authority was provided through a resolution adopted by the U.S. House of Representatives Committee on Public Works and Transportation adopted 11 March 1982. This resolution reads as follows:

> Resolved by the Committee on Public Works and Transportation of the House of Representatives, United States, that the Board of Engineers for Rivers and Harbors established by the Section 3 of the River and Harbor Act approved June 13, 1902, is hereby requested to review the reports on the Ohio River published as House Document No. 492, 60th Congress, First Session, and House Document No. 306, Seventy-fourth Congress, First Session, and other pertinent reports with a view to determine whether any modification in the authorized plan for modern barge navigation and other purposes on the Ohio River is advisable at this time with particular emphasis on need for improvement or replacement of Emsworth Locks and Dam, Ohio River Mile 6.1; Dashields Locks and Dam, Ohio River Mile 13.3; Montgomery Island Locks and Dam, Ohio River Mile 31.7; and other locations where obsolete or inadequate facilities impede the orderly flow of commerce.

PART A

J.T. MYERS L&D SITE

REAL ESTATE PLAN

Project Location And Description

The proposed project land is on either Tract 100 or 101 of Segment 1 of RE Project Maps. This is the area where the locks, dam, and operation buildings are located. This location is approximately 3 l/2 miles downstream from Uniontown, Kentucky at river mile 845.9. The existing locks sit on the right bank (Indiana side) of the Ohio River in Posey County, Indiana. Approximately 94 acres will be needed to dispose of 870,000 cubic yards of dredged material. Three alternatives are being considered for construction staging area and disposal sites. The

Figure 2-1. Aerial Photograph of J.T. Myers Locks and Dam.

amount of acreage required will vary with each alternative to accommodate the 94 acres needed. The J. T. Myers Locks and Dam is formerly the Uniontown Locks and Dam. This is a full federal project.

The proposed project requires that the landward auxiliary lock chamber be extended by 600 feet. This would make both the main chamber and auxiliary chamber 1200 feet in length. Material will be removed from the bank and river for construction of the lock extension. Actual construction of the lock extension will take place within fee owned land. Staging areas and access will be from public roads or on existing U.S.A. fee lands. There are three alternatives to place the disposal material that are being considered. Sites are shown on Drawing Nos. 13.0A, and 13.0B, attached as Exhibits A and B to this report; also found in the Engineering Appendix. The alternatives are as follows:

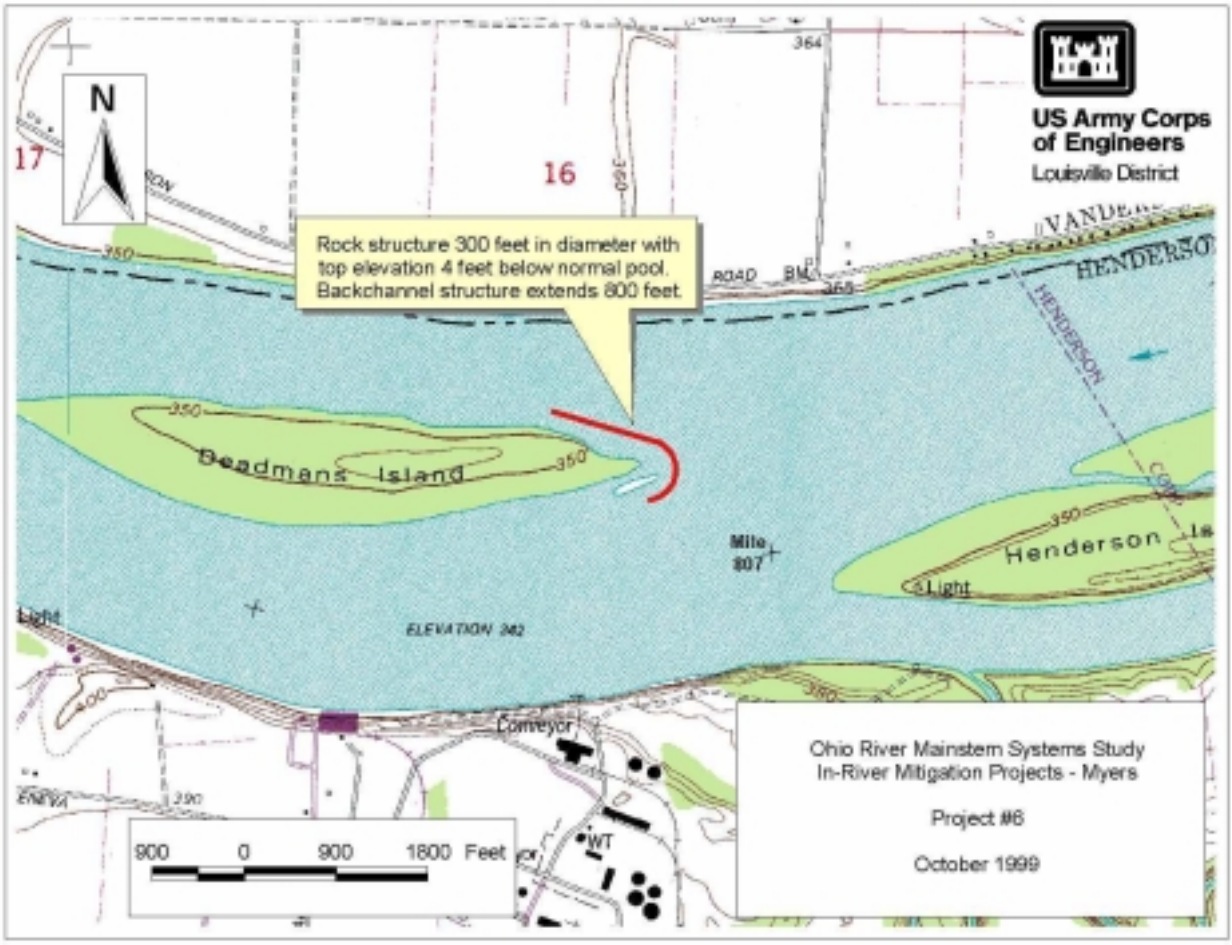
a. Alternative No. 1 (Preferred Plan) All disposal material will be placed on the existing project site, government-owned land, that is currently under lease to the Indiana Department of Natural Resources for habitat restoration. This land is part of Government Tracts 100 and 101. Sufficient land is available for staging near the construction site. Approximately 94 acres will be needed to place disposal material and mitigate. This will involve disturbing an existing restoration project under Section 1135 of the Water Resources Development Act of 1986. The project will require placing disposal material over 20 acres of prairie and 10 acres of scrub shrub. The remaining 64 acres is outside of the leased area. The intent is to modify and enhance the affected leased area by replacing frequently mowed grasses, prairie land, and replanting scrub shrub with indigenous bottomland hardwood species. Initial coordination has begun with the State of Indiana to develop an acceptable mitigation plan. No wetland areas are affected by this alternative. (See Exhibit A - Page A-15)

b. Alternative No. 2 - Disposal material would be hauled and placed on 143 acres at Hovey Lake that is currently under license to Indiana Department of Natural Resources. This area is on Government Tract No. 415 that experiences seasonal flooding. The placement of disposal material will disturb land that is leased for agriculture production by the State of Indiana and is planted in row crops. If this alternative is chosen, this disposal material would be used to create moist soil units for waterfowl management meeting the requirement for mitigation. No wetland areas are affected by this alternative. Access to this area is by public roads. The construction staging area would remain on government Tracts 100 and 101. (See Exhibit B - Page A-16)

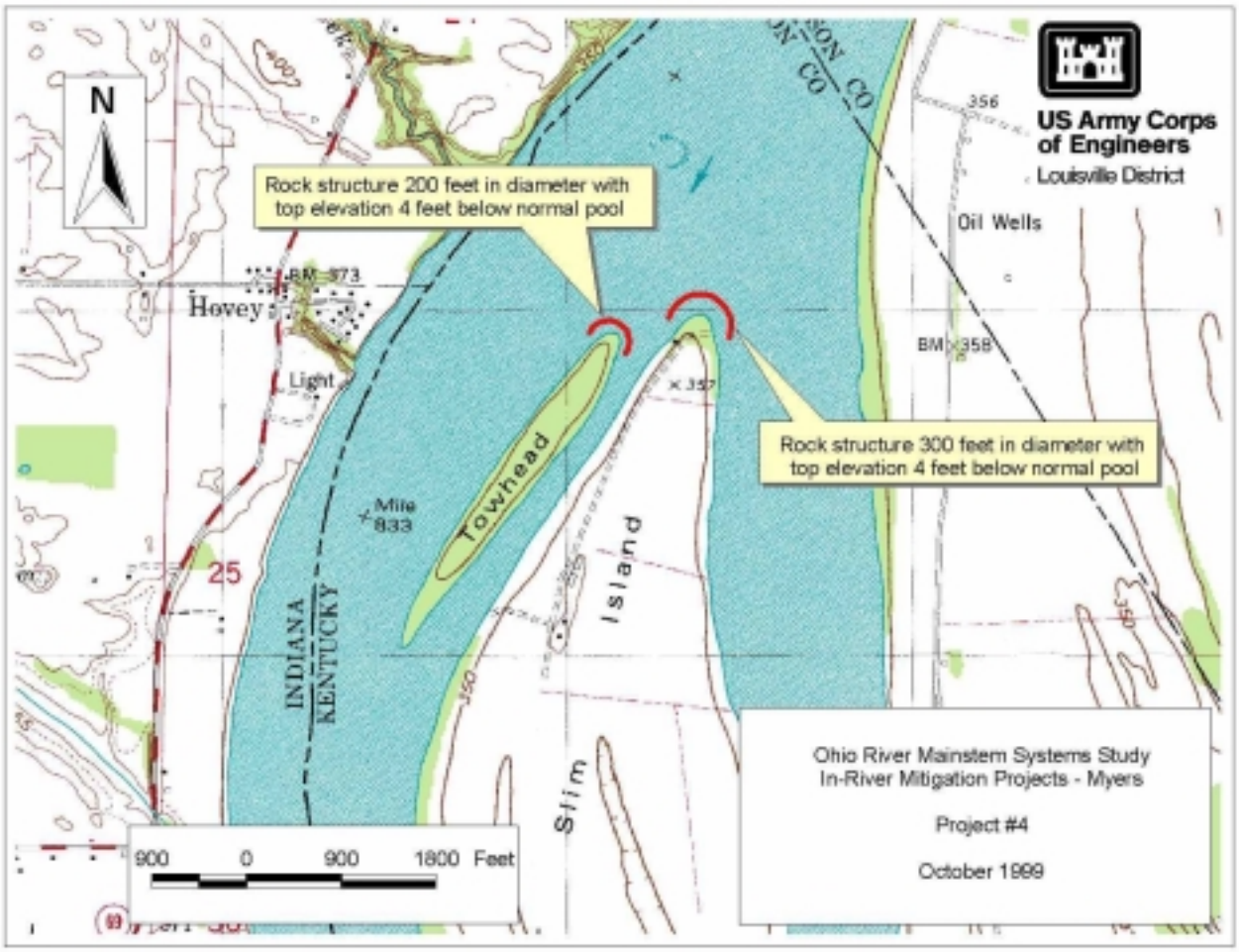
c. Alternative No. 3 - Disposal material would be hauled and placed on privately owned land that abuts the east boundary of Myers. A 528 acre farm will be needed to place spoil material and for mitigation purposes. The land is currently used for agriculture purposes and contains 260 acres of cropland, 160 acres of woodland and 8 acres of miscellaneous. Approximately 150 acres of cropland will be needed for disposal and mitigation. The intent is to reduce forest fragmentation in the area creating a wildlife corridor to adjacent wooded tracts. The 150 acres of cropland is not contiguous and must be obtained from the entire farm. While the three southern blocks could be combined to attain the 150 acres, it leaves the north end of the farm landlocked. There are parcels of 20 acres of cropland that could be used for the mitigation area on the farm. There is a cabin situated on west central part of the property. Approximately 30 acres of woodland is considered wetland areas that will not be affected by this project. One private ownership is affected by this alternative. Access is from county roads. The construction staging would remain on government Tracts 100 and 101. (See Exhibit B - Page A-16)

During the construction of the lock the Indiana bank will be reshaped disturbing woodland. Riparian forest mitigation will be required. Approximately 20 acres will be required. The location of the land has not been identified except that it will need to be cropland. Consideration is being made to developing ten acres on government owned land. The remaining ten acres will need to be acquired from the immediate area.

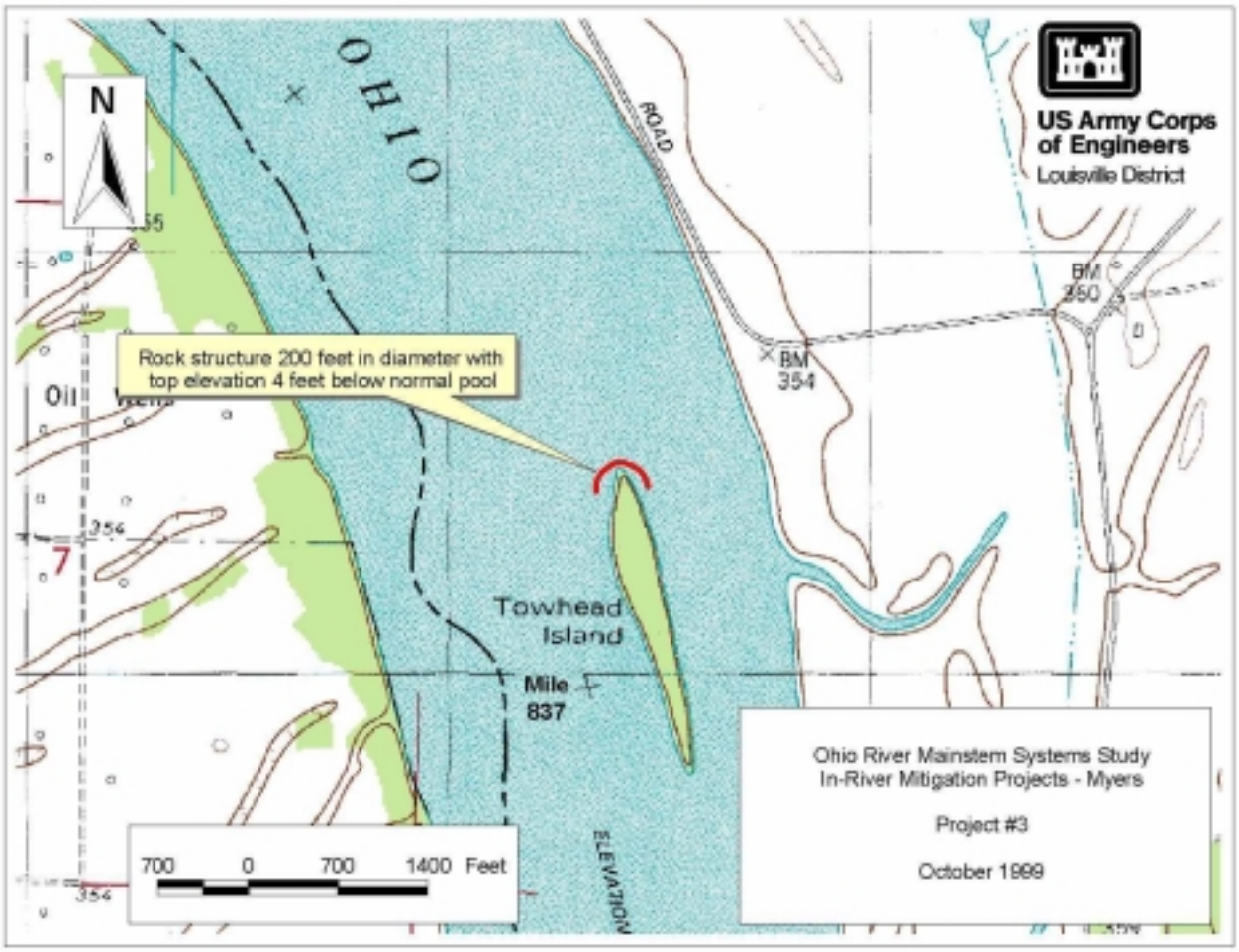
In addition to mitigation planned on land, seven in-stream mitigation sites are proposed for the loss of fish and wildlife. It is proposed to construct all of these sites within navigational servitude, therefore no real estate acquisition is necessary. (See Exhibit C - Page A-17) They are presented in this report by stream mile then project number, as follows:



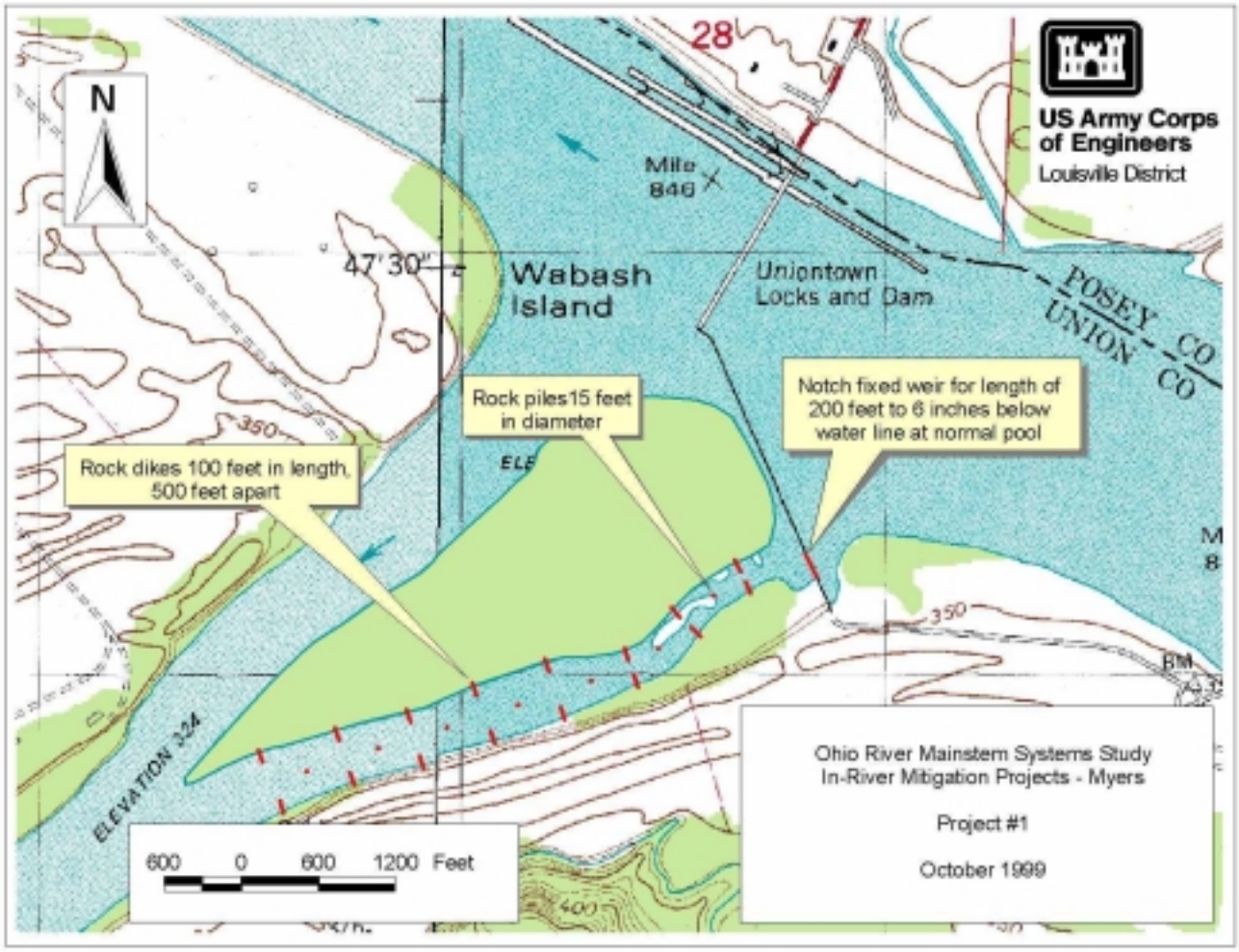
a. Stream Mile 807 (Project 6) – Provide permanent shallow water habitat in back channel of Deadmans Island by protecting head of eroding island and extending protection down back channel side of island. Rock structure will be placed in the water in a half-circle shape. Area required is less than two acres. Construction will be performed by the use of water based equipment occurring during the summer months.



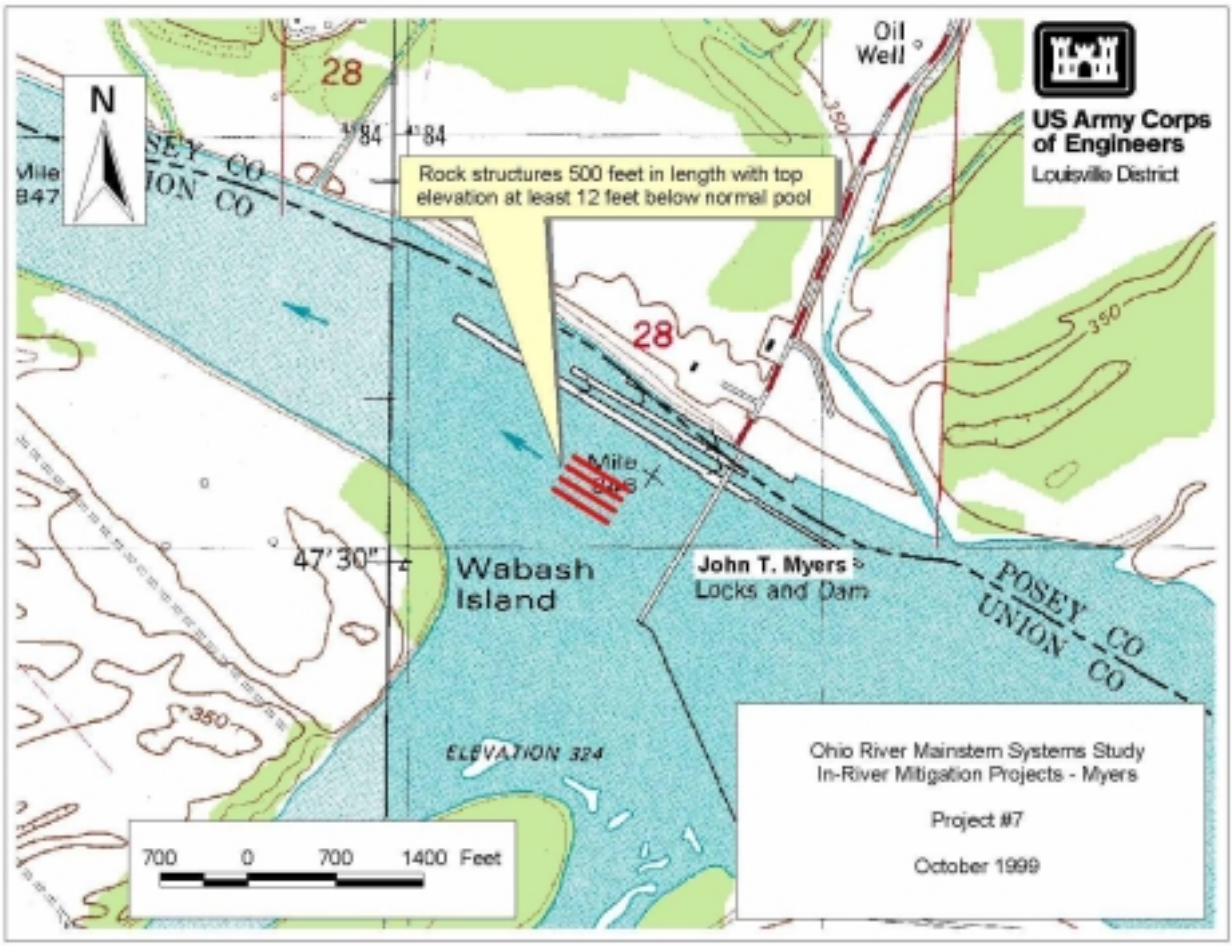
b. Stream Mile 833 (Project 4) – Provide permanent shallow water habitat in back channel of Slim Island and Towhead Island by protecting heads of two eroding islands. Rock structures will be in the water in a half-circle shape. Area less than two acres for each island. Construction will be performed by use of water based equipment occurring during the summer months.



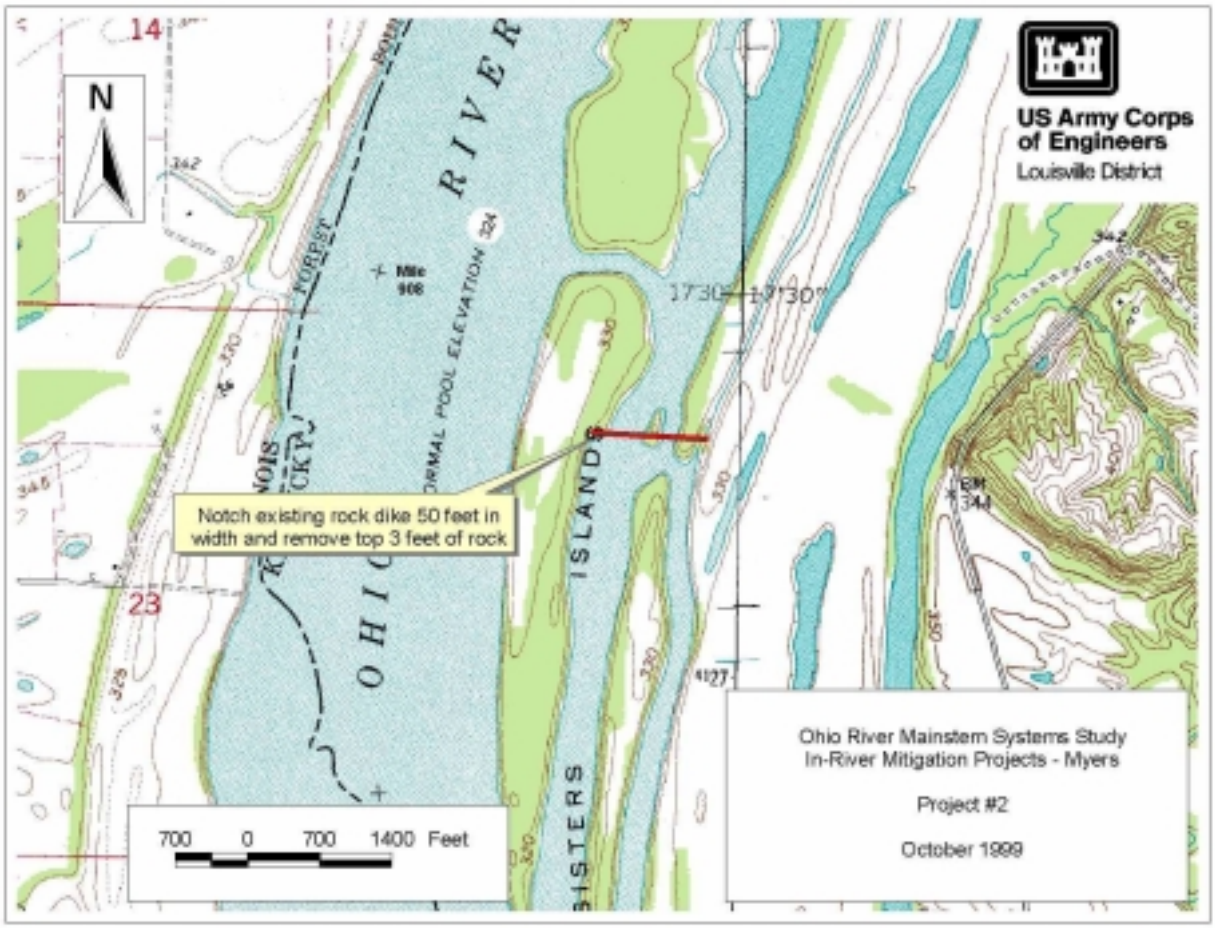
c. Stream Mile 837 (Project 3) – Provide permanent shallow water habitat in back channel of Slim Island Towhead #2 by protecting head of eroding island. Rock structure will be placed in the water in a half-circle shape. Area required is less than two acres. Construction will be performed by the use of water based equipment occurring during the summer months.



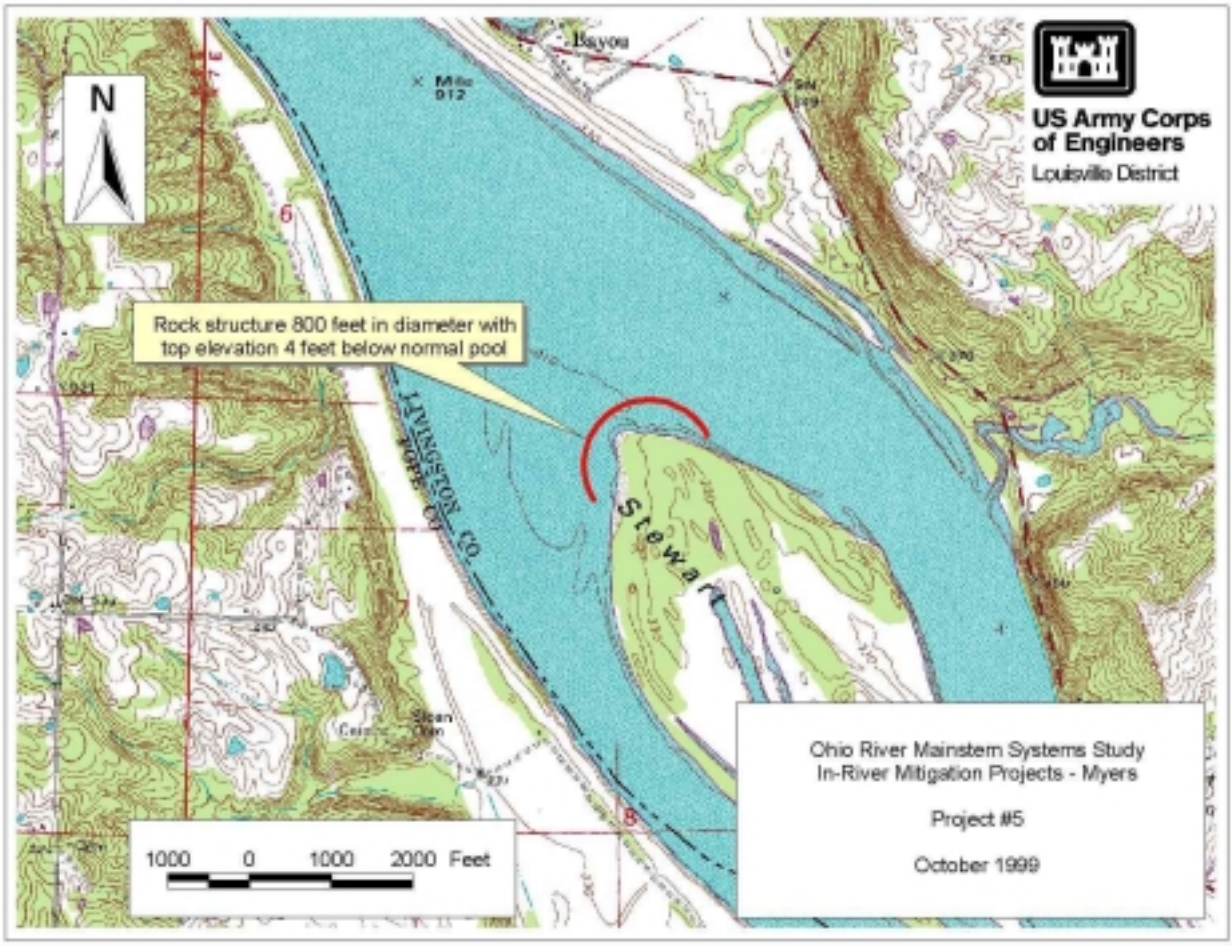
d. Stream Mile 846 (Project 1) – Build simple rock structures in back channel and provide small additional flow by cutting a notch in the fixed weir at the channel immediately north of the Kentucky side and the south weir abutment of Myers. In addition, construct 16 rock dikes in back channel extending from shoreline into back channel, and construct 15 rock piles in back channel in the middle of the channel. Area required is less than two acres. Portion of property is on Tract 123 and Tract 124 and private land. Water depth currently at each rock dike site is zero at shoreline to 4 to 6 feet deep at the riverward end of each rock dike. Construction will be performed by the use of water based equipment occurring during higher pool stages.



e. Stream Mile 846 (Project 7) – Provide permanent submerged rock dikes below tainter gates of Myers dam to replace hard substrate lost in excavation of lower approach at Myers. Construction will be performed by the use of water based equipment occurring during higher pool stages. Dike closest to lock chambers will be approximately 400 feet from riverward lockwall or between tainter gates 4 and 5. Area required is less than two acres.



f. Stream Mile 908 (Project 2) – Reopen Sisters Islands back channel by breaching existing rock dikes that were constructed in early 1900's for navigation purposes which are no longer needed for that function. Construction will be performed by the use of water based equipment occurring during higher pool stages on the portion of Sisters Islands that is wet during the summer months (ORM Mile 908.5). Area required is less than two acres. Site is Government Tract 701-2.



g. Stream Mile 912 (Project 5) – Provide permanent shallow water habitat in back channel of Stewart Island by protecting head of eroding island. Construction will be performed by the use of water based equipment occurring during summer river stages. Area required is less than two acres.

Ownership Data

a. Alternative No. 1: United States Government, Tracts 100 and 101
Department of Natural Resources, State of Indiana, Lease DACW27-1-98-011
Private Ownership

b. Alternative No. 2: United States Government, Tracts 100, 101, 415
Department of Natural Resources, State of Indiana, License DACW27-3-74-108
Private Ownership

c. Alternative No. 3: United States Government, Tracts 100 and 101
Private Ownership: Charles R. Elbert, Catherine B. Elbert, Linda Kay Elbert, and Catherine Charlen Elbert, as General Partners of the Charles R. Elbert Family Limited Partnership

d. In-Stream Mitigation Sites:
Project Nos. 1, 3 through 7 – Navigational Servitude
Project No. 2 United States Government Tract No. 701-2 licensed to Commonwealth of Kentucky, Department of Fish and Wildlife License No. DACW27-3-76-05092

Outstanding Rights

At this time there is a lease with The Indiana Department of Natural Resources on the land that is anticipated to hold the disposal material for Alternative No. 1. Lease, DACW27-1-98-011, dated 1 October 1997 to end on 30 September 2001 with automatic renewal for four successive year terms. Included in this lease as its Exhibit A is a fully executed Project Cooperation Agreement between the US Government and this sponsor implementing a Section ll35 project to be known as the Little Pitcher Lake, Wetland Enhancement, Prairie Development and Forestation. Wetland improvements included improvement to the lake, planting prairie grasses, and bottomland hardwood plantings over 80 acres. Total cost to build this wetland project was $130,000 with a total of $50,000 to be spent on yearly operation and maintenance over the life of the project. The Government is planning to place disposal material over 20 acres of prairie and 10 acres of scrub shrub. The remaining 64 acres are outside of this lease. It is the intent of this project to further enhance this area by restoring the prairie grasses and replanting the scrub shrub area with a mixture of indigenous bottomland hardwood species. The Indiana Department of Natural Resources has been contacted by the Louisville District Environmental Section and is willing to work with the Government. When this project is approved the existing lease is to be amended to include any additional acreage with its new restoration plan and mapping.

License No. DACW27-3-74-108, effective 1 Dec 73 through 30 Nov 2013, allows the State of Indiana to use approximately 2,304.38 acres to implement, operate and manage a fish and wildlife program on land designated for use by Alternative No. 2. Supplemental Agreement No. 1, effective 13 February 1980 authorized the licensee to plant or harvest crops either directly or by service contract. The area under consideration is presently leased to an individual for crop production. The existing license would be amended reflecting any change made to the surface of the land.

License No. DACW26-3-76-5092, effective 1 Jan 76 through 31 Dec 2000, allows the Kentucky Department of Fish and Wildlife to implement, operate and manage a wildlife program over 1,168 acres. Supplemental Agreement No. 1 and 2 increased acreage. Supplemental Agreement No. 3, effective 25 Sep 91, authorized to licensee to plant or harvest crops and to cut timber. This area includes Sisters Islands that is Project 2 of the in-stream mitigation sites. The existing license may be amended to reflect any change that would not fall under navigational servitude.

Navigational Servitude is considered appropriate for the in-stream mitigation sites. All the work is to take place below the ordinary high water mark of the Ohio River, a navigable stream. A preliminary Attorney's Opinion has been prepared in support of the use of navigational

Servitude (See Exhibit D - Page A-18). This in-stream mitigation is required in support of the project for loss that will be incurred during construction. The in-stream mitigation sites will include rock dikes to protect eroding islands and replace hard substrate lost in the excavation of the lower approach at Myers.

No off-site or public utilities are impacted by this project. On-site utilities are owned by the Government and if affected will be a part of the construction project.

Severance Damages

There are no severance damages to be addressed by this report.

Mineral Activity

There are no outstanding mineral interests to be addressed by this report for the affected tracts.

Environmental

Hazardous, Toxic, and Radioactive Waste (HTRW)

Phase I HTRW assessment for J. T. Myers has been completed. Results of this assessment note a potential for contaminated material from wet excavation and further investigation would be required. The Louisville District maintenance dredging sampling data from recent work near JT Myers indicated that there should be no significant contamination associated with the proposed work. Continued sampling by IDEM (Indiana Department of Environmental Management) is being developed for the next phase of the project.

Mitigation Issues

Riparian forest mitigation is required for land along the bank that will be disturbed. This involves approximately 20 acres. Ten acres will be made available on government owned land and ten acres will be required from private property. In addition, in-stream mitigation sites have been selected in or around existing islands to protect them from further erosion and loss of aquatic life. There will be no real estate acquisition, as construction work will take place within navigational servitude. Project No. 2 is to notch an existing rock dike on government owned

land licensed to the Commonwealth of Kentucky for wildlife management. This is the only in-stream site that is above the ordinary high water line.

Preservation of Archaeological or Historical Sites

There are no archaeological resources or historical sites that are listed on or eligible for listing on the National Register of Historic Places in the project area. A Programatic Agreement is being prepared by appropriate organizations in the advent that unknown historic resources are discovered before or during construction.

Relocation

There are no roads, utilities, public facilities, or cemeteries to be relocated in the project area. There are no homes or businesses requiring relocation as a result of this project. No one is residing in the cabin for Alternative No. 3. It appears to be used for weekend retreats. No additional relocation costs are included.

Highest and Best Use

Highest and Best Use may be defined as the most profitable, likely use to which a property can be placed. It is that use of land, which may be reasonably expected to produce the greatest net return over a given period of time.

The application of highest and best use is appropriate if Alternative No. 3 is chosen. The property is presently used for agriculture purposes. The farm consists of 528 acres of which 260 acres is cropland, 260 acres is woodland, and 8 acres is miscellaneous. It is subject to seasonal flooding. There is approximately 30 acres of wetland all in the woodland area. The woodland has merchantable timber. The highest and best use is considered it present use, cropland with timber production as a secondary use. The timber has not been cruised but is considered to have value. There are no minerals that would affect value.

Administrative Costs

For the purpose of this report administrative expenses for J.T. Myers Lock Extension are anticipated at $17,500 per tract including a 15% contingency. There are alternative plans as well as seven proposed in-stream mitigation sites that may or may not be selected as final sites in the plans and specifications portion of this project. Therefore, an itemized administrative estimate will be provided in the Supplemental Real Estate Design Memorandum that will be prepared later for the project. At this time these administrative costs are part of the individual cost estimates prepared for each component.

Real Estate Cost Estimates

Each alternative has a real estate cost estimate, as follows:

a. Alternative No. 1 - All real estate costs applicable to this alternative will be administrative to implement a change to the existing lease and the riparian forest mitigation, as follows:

Fee [Mitigation Land]	20,000
Administrative [Amend Lease]	5,000
Administrative	17,500
Total Real Estate Costs	$42,500

b. Alternative No. 2 - All real estate costs applicable to this alternative are as follows:

Fee [Mitigation Land]	$20,000
Damages [Agriculture Lease]	11,000
Administrative [Amend Lease]	5,000
Administrative	17,500
Total Real Estate Costs	$53,500

c. Alternative No. 3 - All real estate costs applicable to this alternative are as follows:

	Acres	Total Value
Fee Simple	528	$554,000
Minerals [None]		0
Timber		66,000
Fee Improvements [Cabin]		30,000
Easements [None]		0
Severance Damages [None]		0
Total Land, Improvements, and Damages		$650,000
Contingency @ 25%		162,500
TOTAL ESTIMATED COSTS		$812,500
Relocation [None]		0
Administration: 1 Tract		$ 17,500
TOTAL REAL ESTATE COSTS		$830,000

d. In-Stream Mitigation Sites

All but one of the in-stream sites fall within navigational servitude. No real estate acquisition will be required for those sites. Project 2 at Stream Mile 908 is for mitigation at Sisters Islands. One section of this dike is on land licensed to the State of Kentucky. The following cost estimate reflects an administrative cost of $5,000 to amend license.

Estates

Estates to be acquired are Standard Estate No. 1 “Fee” as stated in Chapter 5, ER 405-1-12, “Estates”. No non-standard estates will to be used.

Method of Acquisiton

If acquisition methods are applicable to this project, the District Office will prepare all real estate maps. Title evidence will be obtained by contract. Staff/contract appraisers will prepare detailed tract appraisals. All work would commence upon project approval and availability of funds. There is no known opposition to this project. There is strong support for the project by the navigation industry.

Schedule of Acquisition

When project is finalized during PED, a supplemental REDM will be prepared. At that time real estate requirements will be more defined and a schedule will be included, if there is acquisition.

Recommendation

It is recommended that the concepts presented in this Real Estate Plan be approved and authority be granted to further proceed with the planning and development of the final project real estate requirements. Final real estate requirements will be included a Supplemental Real Estate Design Memorandum as directed by Headquarters, Real Estate Division.

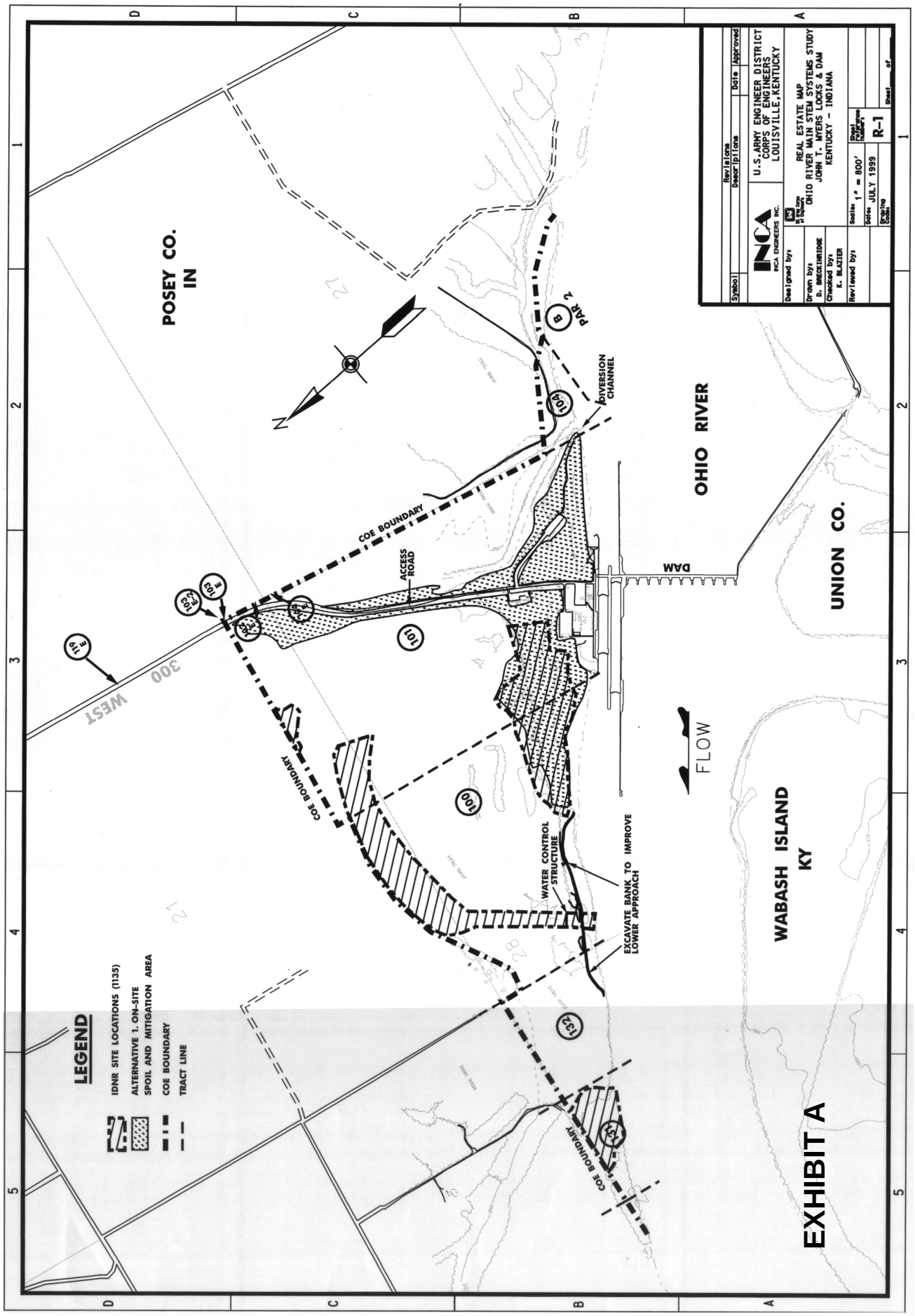
Exhibits

Exhibit A – Plate 13.0A of CE Drawings for ORMSS

Exhibit B – Plate 13.0B of CE Drawing for ORMSS

Exhibit C – Plate 13.0C of CE Drawing for ORMSS

Exhibit D – Preliminary Attorney’s Opinion


POSEY CO.
IN
OHIO RIVER
UNION CO.
WABASH ISLAND
KY
DAM
ACCESS ROAD
DIVERSION CHANNEL
COE BOUNDARY
WATER CONTROL STRUCTURE
EXCAVATE BANK TO IMPROVE LOWER APPROACH
FLOW
300 WEST
PAR 2
LEGEND
IDNR SITE LOCATIONS (1135)
ALTERNATIVE 1. ON-SITE SPOIL AND MITIGATION AREA
COE BOUNDARY
TRACT LINE
EXHIBIT A
U.S.ARMY ENGINEER DISTRICT CORPS OF ENGINEERS LOUISVILLE,KENTUCKY
REAL ESTATE MAP
OHIO RIVER MAIN STEM SYSTEMS STUDY
JOHN T. MYERS LOCKS & DAM
KENTUCKY - INDIANA
INCA ENGINEERS INC.
Scale: 1" = 800'
Date: JULY 1999
R-1

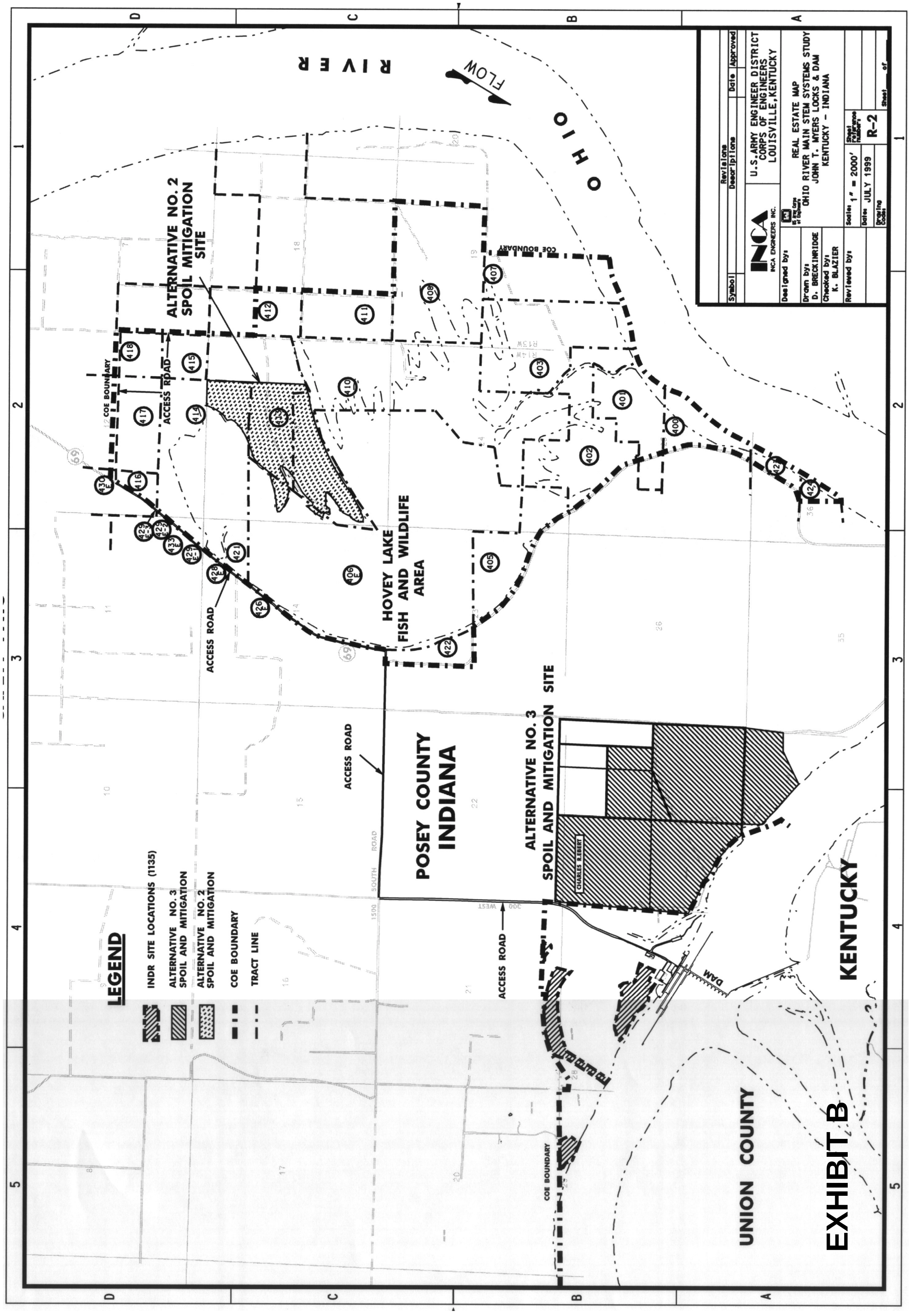

OHIO RIVER
FLOW
U.S.ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY
REAL ESTATE MAP
OHIO RIVER MAIN STEM SYSTEMS STUDY
JOHN T. MYERS LOCKS & DAM
KENTUCKY - INDIANA
INCA ENGINEERS INC.
Designed by:
Drawn by: D. BRECKINRIDGE
Checked by: K. BLAZIER
Reviewed by:
Scale: 1" = 2000'
Date: JULY 1999
R-2
ALTERNATIVE NO. 2
SPOIL MITIGATION SITE
HOVEY LAKE
FISH AND WILDLIFE AREA
COE BOUNDARY
ACCESS ROAD
POSEY COUNTY
INDIANA
ALTERNATIVE NO. 3
SPOIL AND MITIGATION SITE
CHARLES R. EBERT
DAM
KENTUCKY
UNION COUNTY
LEGEND
INDR SITE LOCATIONS (1135)
ALTERNATIVE NO. 3 SPOIL AND MITIGATION
ALTERNATIVE NO. 2 SPOIL AND MITIGATION
COE BOUNDARY
TRACT LINE
EXHIBIT B

EXHIBIT C
OHIO RIVER
KENTUCKY
INDIANA
ILLINOIS
WABASH RIVER
PROJECT #1
PROJECT #2
PROJECT #3
PROJECT #4
PROJECT #5
PROJECT #6
PROJECT #7
RALEIGH
MORGANFIELD
OLD SHAWNEETOWN
ELIZABETHTOWN
GOLCONDA
LAMB
HURRICANE ISLAND
BONDEAU ISLAND
PRYOR ISLAND
SISTERS ISLANDS
STEWART ISLAND
DIAMOND ISLAND
SLIM ISLAND
WABASH ISLAND
J.T. MYERS DAM
MT. VERNON
EVANSVILLE
HENDERSON
SEBREE
UNIONTOWN
STURGIS
SULLIVAN
CLAY
MARION
LOLA
GALLATIN CO
HARDIN CO
POPE CO
UNION CO
CRITTENDEN CO
LIVINGSTON CO
POSEY CO
VANDERBURGH CO
HENDERSON CO
PROJECT NO. RIVER MILE
#1 ---------- 846
#2 ---------- 908
#3 ---------- 837
#4 ---------- 833
#5 ---------- 912
#6 ---------- 807
#7 ---------- 846
N
INCA ENGINEERS INC.
U.S.ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
LOUISVILLE,KENTUCKY
REAL ESTATE
OHIO RIVER MAIN STEM SYSTEMS STUDY
JOHN T. MYERS LOCKS & DAM
KENTUCKY - INDIANA
IN-STREAM MITIGATION SITES
Designed by
Drawn by D. BRICKWIRIDGE
Checked by K. BLAZIER
Reviewed by
Scale NONE
Date JULY 1999
Drawing Code
R-3
Revisions
Description
Date
Approved
Symbol

PRELIMINARY ATTORNEY'S OPINION

EXHIBIT D

I, R. Alexander Bate, III, of Louisville, Jefferson County, Kentucky, do hereby certify that I am employed as an Attorney-Advisor in the office of the Real Estate Division of the Louisville District, U.S. Army Corps of Engineers, Louisville, Kentucky and that I am an Attorney at Law, duly qualified to practice law in the Commonwealth of Kentucky.

This opinion is given as part of the Interim Feasibility Report for the Ohio River Mainstem Systems Study which recommends the extension of the six hundred foot lock to twelve hundred foot at J. T. Myers Locks and Dam. If approved this extension will be accomplished under the Rivers and Harbors Act of June 13, 1902.

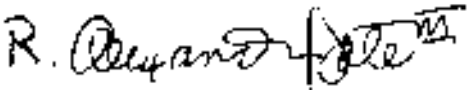
The Water Resources Development Act of 1986, Public Law 99-662, Section 906(d)requires that "the Secretary shall not submit any proposal for authorization of any water resources project to Congress unless such report contains (1) a recommendation with a specific plan to mitigate fish and wildlife losses created by such project....".

That study was done and it is part of this report. The study recommended that seven mitigation actions be done to prevent loss of aquatic habitat to fish. The recommendation was to place certain structures in the water to mitigate the loss of fish habitat. The question is whether those structures could be built under the principal of navigational servitude and it is therefore not necessary to acquire any interest in real estate from the landowner and pay compensation.

The case law and ER 405-2-150 and ER 1165-2-302 provide that Navigational servitude is the right of the United States to use the banks, beds and waters lying below the ordinary high water mark on the banks of a navigable stream as may be necessary or convenient in aid of or for the purpose of improving navigation, irrespective of who holds title to such land, without payment of compensation. This right is derived from the Commerce Clause of the U.S. Constitution. Such use is not a taking of property without just compensation in violation of the Fifth Amendment of the U.S. Constitution but, rather, is the exercise of a right to which such property has always been subject.

The mitigation sites are within a navigable waterway and are under the ordinary high water mark. Further, they are required by Congress under the Water Resources Development Act of 1986 to carry out the navigational work on J. T. Myers Locks and Dam which is in the aid of navigation.

It is , therefore, my conclusion that the doctrine of navigational servitude can be used to build the structures and it is not necessary to acquire and pay for an interest from the landowners.



R. Alexander Bate, III
Attorney-Advisor
October 6, 1999

PART B

GREENUP L&D SITE

REAL ESTATE PLAN

Project Location And Description

The Greenup Lock and Dam is part of a system of 20 locks and dams on the main stem of the Ohio River. The Greenup project is located at River Mile 341. The total project contains approximately 3,258 acres. Of that acreage, 165.93 acres are owned in fee at the lock site (lower portion of Figure B-1), 45 acres in fee are located on the abutment side of the dam (upper portion of Figure B-1), and 107 acres in fee are owned at various recreation sites. The remaining acreage is in flowage easements or lesser estates. Construction of the Greenup Locks and Dam was initiated in October 1954. The Locks were placed in operation November 1959. The pool was raised to full height in June 1962. The proposed project includes lengthening the auxiliary lock chamber to match that of the main chamber which is 1200 feet in length. This will have no effect on current pool levels.

Figure B-1. Photograph of Greenup Locks and Dam

The overall main stem Ohio River extends from the junction of the Allegheny and Monongahela Rivers at Pittsburgh, Pennsylvania, to near Cairo, Illinois where the Ohio joins the Mississippi River. This area includes 981 miles of commercially navigable channel and a total drainage area of 204,000 square miles. The Ohio River is a vital transportation artery for the basin, as well as a large number of other states through its interconnections with the Mississippi River, the Great Lakes and U. S. coastal ports.

In addition to its valuable role in supporting economic development the Ohio River navigation system also offers a wide range of recreation opportunities, including fishing, camping, boating, skiing, sightseeing and a host of other activities. The system also provides important habitat for a variety of fish, mollusks, waterfowl, migratory birds and furbearers.

The topography of the overall study area lies in a transition area from rugged mountains to flat plains. The Appalachian Mountains dominate to the east. West of the project and south of the Ohio River, the landscape contains considerable local relief, which gradually modifies to rolling plains through most of Kentucky and Tennessee. North of the Ohio River, broad valleys with only minor relief extend from southwestern and central Ohio through central Indiana into southern Illinois. The area in the immediate vicinity of the Greenup Locks and Dam project is a wide floodplain bounded on the north and south by hills.

Ownership Data

The proposed project requires that the landward auxiliary lock chamber be extended by 600 feet. This would make both the main chamber and auxiliary chamber 1200 feet in length. There is no additional real estate required to accomplish this modification. The majority of this construction would take place within the navigational servitude. Any other construction, including staging and disposal areas, would take place on 165.93 acres of existing U.S.A. fee lands. Tracts affected by construction include A106, A108, A110, A112, A116, A118, A120, and A122.

Outstanding Rights

Tract A-106 was purchased reserving the right of the former owners to access their remaining and adjoining lands by crossing Tract A-106. This reservation will not affect construction of the lock extension.

Tracts Nos. A-108, A-110, and A-112-1 were acquired subject to a right-of-way easement to Kentucky Power Company. This easement will not affect construction of the lock extension adversely.

Public Facilities:

The Kentucky Department of Transportation (KDOT) approach to the highway bridge crossing the dam will not require relocation, however, final design may require that the Government attach the power feed (for the L&D) to the approach piers during construction. Some discussions have indicated a permanent move to this location. The bridge across the dam itself is Corps owned. A perpetual road easement has been granted to KDOT for the Kentucky-side approach to this bridge. That easement reserved to the U.S.A. rights-of-way for all purposes across over, and/or under the right-of-way granted as long as those rights are not used in such a way as to unnecessarily interfere with the use of the grantee for highway purposes. Should this power feed need to be moved onto the bridge piers, this work will be fully coordinated with KDOT. The Government has sufficient rights to accomplish this work without entering into a relocation contract with KDOT to convey additional rights. It is likely that a permit will be obtained from KDOT prior to performing the work.

Tennessee Gas Pipeline has facilities within the project area. Two easements have been conveyed to them. One for the construction, operation, and maintenance for a gas pipeline across U.S.A. Tracts Nos. A-108, A-110, A-112-1 and A-112-2. The second is for the construction, operation, and maintenance of riprap to prevent erosion to their 30-inch pipelines. Project construction will not affect these facilities.

The Kentucky Power Company aerial river crossing at the upstream end of the project will not be affected by project construction.

Miscellaneous utility lines running underground through the area to be excavated at Greenup L&D are Corps-owned. These lines will be moved, altered, or replaced at Government expense. A sanitary leach field will also be affected, it too is Corps-owned (not owned by the sewer district). The temporary and final fixes to the leach field will be project features.

Severance Damage

There are no severance damages to be addressed by this report.

Mineral Activity

There are no outstanding mineral interests to be addressed by this report.

Environmental

National Environmental Policy Act (NEPA) Status

The Ohio River Mainstem System Study (ORMSS) has had ongoing National Environmental Policy Act (NEPA) coordination and compliance since the early stages of the study effort. The initial coordination with Federal and state agencies began in October 1996 and continues through this date. NEPA compliance will consist primarily of the documents that will be completed, filed for official notice with US Environmental Protection Agency, and available for public review by Federal, state and local agencies, public interest groups and individuals.

Compliance under NEPA is an ongoing effort for ORMSS. For the current interim report, a Notice of Intent to Prepare and Environmental Impact Statement was prepared and published in the Federal Register. In addition to the team meetings with predominantly Federal and state agencies, Public Scoping Meetings were held in Evansville, IN, Huntington, WV and Pittsburgh, PA to allow agencies, interest groups, and individuals a forum and opportunity to ask questions, make written and oral comments, and to gain additional information. An Environment Impact Statement (EIS) is included in this interim report which specifically addresses the Greenup and J.T. Meyers projects and which identifies specific mitigation requirements for these projects (see mitigation issues below).

Hazardous, Toxic, and Radioactive Waste (HTRW)

In accordance with U.S. Army Corps of Engineers (USACE) policy, all sites must be investigated prior to acquisition or construction to determine the potential presence of any materials that may be considered a HTRW contaminant. Twenty-two tracts (22) on the Kentucky side of Greenup Locks and Dam were investigated on the basis of current and previous land usage, the ownership history of the property, interviews with local residents and public officials, regulatory agency records and public documents, and visual inspection of the subject property. This level of investigation was intended to determine the possible presence of HTRW contamination. This investigation is based on the generally accepted standard practice provided in the ASTM Designation: E 1527-97 entitled, "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*," and E 1528-96 entitled: "*Standard Practice for Environmental Site Assessments: Transaction Screen Process*." No soil, water, or other samples were collected or analyzed as part of this investigation.

Historical research into prior ownership and use of the properties did not reveal any previously identified potential for contamination, such as the presence of an industrial facility or landfill. Most of the properties have their origins as farmland. Search of regulatory records revealed an incident that occurred at the Greenup Locks and Dam on September 7, 1996; a valve

ruptured and hydraulic oil was released into the Ohio River. The spill was properly contained and cleaned-up according to State and Federal regulations. This incident does not pose an environmental risk to any of the subject tracts. Site inspections and personal interviews revealed that none of the properties in this study were found to have HTRW concerns related to underground (UST) and aboveground (AST) storage tanks.

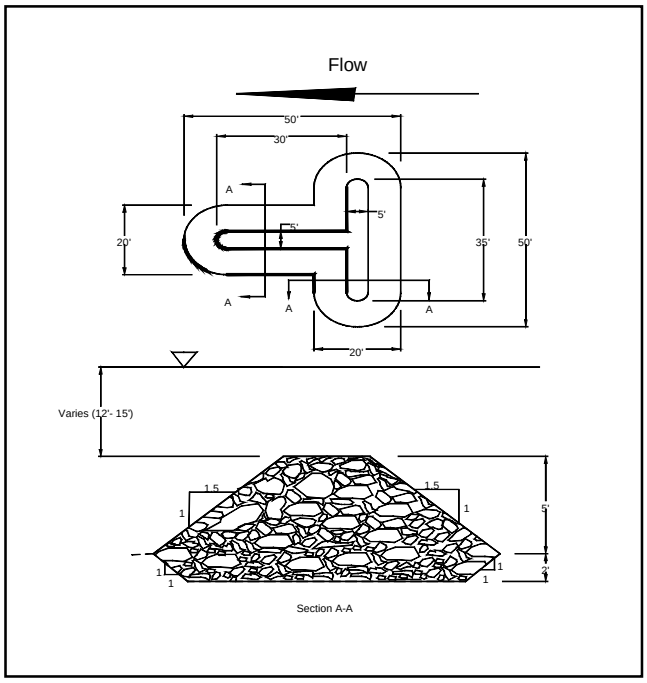
The following tracts showed no evidence of, nor potential for, environmental or HTRW concerns; therefore, no further investigation is recommended.

Tract No.	Owner
A104	United States of America
A106	United States of America
A108	United States of America
A110	United States of America
A112-1	United States of America
A116	United States of America
A118	United States of America
A120	United States of America
A122	United States of America

Based upon the information obtained during the HTRW investigation, no tract within the currently identified construction work limits for the Greenup Lock Extension Project was determined to contain any HTRW concerns, nor were any adjacent tracts observed to contain any HTRW concerns that would impact these tracts during construction.

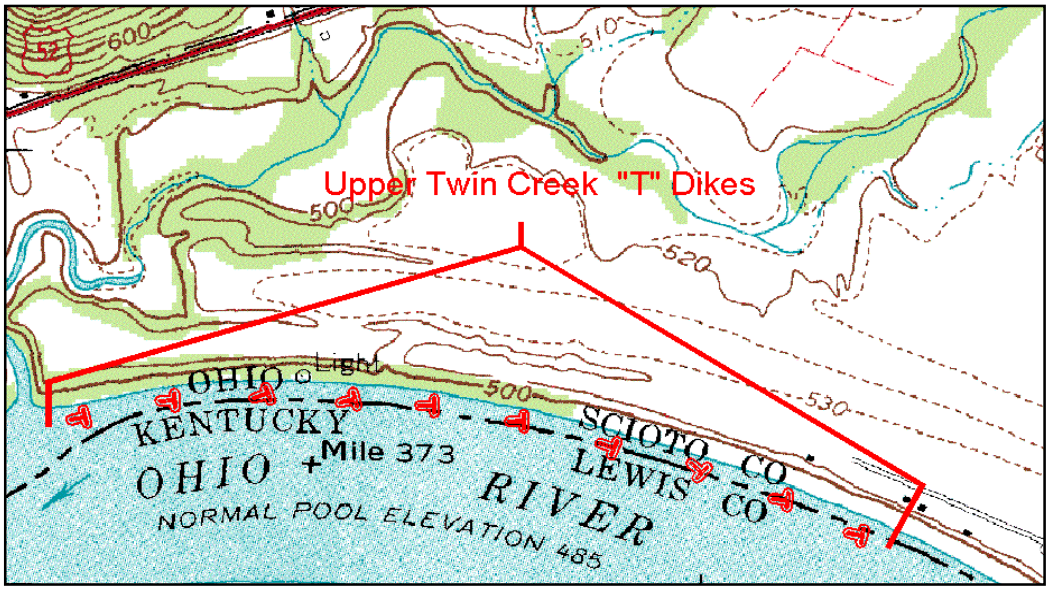
Mitigation Issues

At this point there are several requirements identified to environmentally mitigate for the construction of the proposed lock extension. Work which will take place on existing U.S.A. lands in the immediate vicinity of the project includes vegetation of the spoil area with both grasses and trees; stream bank enhancements, and underwater features in the restricted tail water of the dam. Additionally, there are two mitigation requirements which are not in the immediate vicinity of construction. The first is the placement of underwater T-dikes. T-dikes are boulder piles placed in the shape of a "T." The dimensions are roughly 35 feet in width and 30 feet in length and extend about 5 feet above the channel bottom (see diagram next page).



T-Dike Detail

The dikes will be placed so as not to be a hazard to navigation with the top of the dikes located 12-15 feet below the water's surface. A typical installation would have ten or more of these dikes placed at various depths and distances from the shoreline to maximize habitat heterogeneity. A typical installation is shown below.

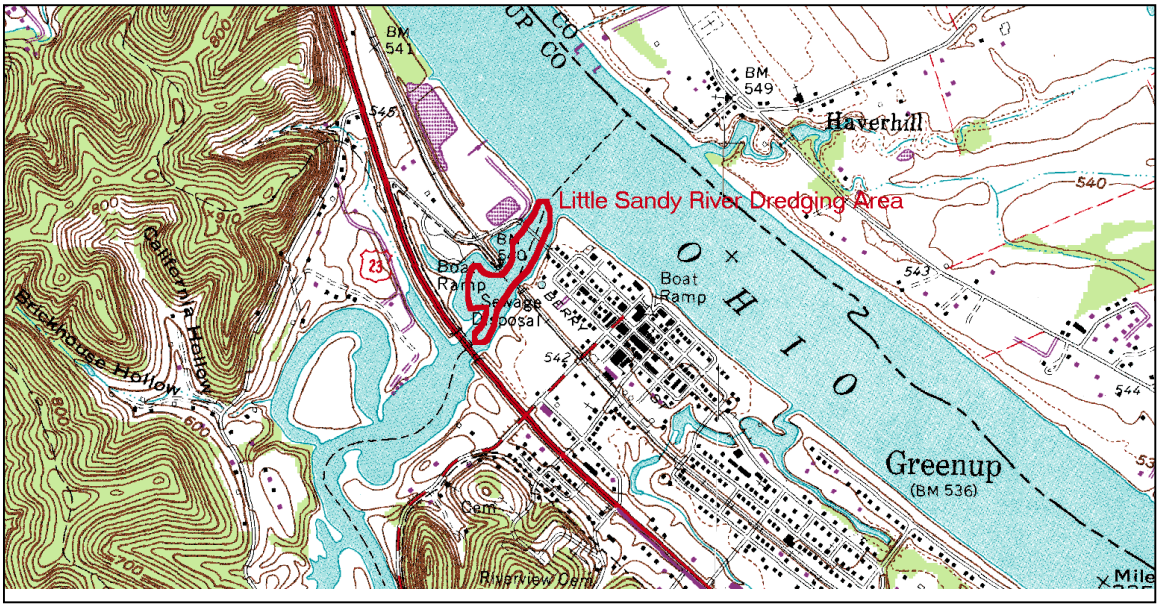


Typical Installation

It is planned to place groupings of these dikes on the Ohio side of the river within the following river mile stretches.

River Mile 336.8 to 337.8
River Mile 354.3 to 354.8
River Mile 357.0 to 358.0
River Mile 362.5 to 364.5
River Mile 366.5 to 368.5
River Mile 372.0 to 373.5
River Mile 376.1 to 379.0

The second mitigation area is an embayment located on the Little Sandy River. The plan anticipates that we will dredge the Little Sandy River from its confluence with the Ohio River upstream to the third bridge. The map below shows the proposed area. Dredging will not affect any public facilities or bridge support structures. It does not need to be a contiguous channel, which will allow for avoidance of any utilities encountered. Gaps can be made where dredging might adversely affect structures and facilities. Spoil from the dredging will be deposited adjacent to the channel below the normal pool elevation so as to form shallow areas. These areas will then be vegetated with aquatic plants. See the ESTATES section below for a discussion of the real estate interests for construction, operation, and maintenance of these mitigation features.



Little Sandy River Dredging Area

Relocation Assistance (P.L. 91-646)

There are no homes or businesses requiring relocation as the result of this project.

Highest and Best Use

The issue of highest and best use is not applicable to this project. All construction will take place on existing U.S.A. fee lands or within the navigational servitude.

Administrative Costs

Estimated administrative costs for the Greenup Lock Extension project are estimated to be $50,000. This cost is for activities linked to preparation of a Supplemental Real Estate Design Memorandum (REDM) prior to certification of real estate and review of real estate requirements during design.

Real Estate Cost Estimate

There are no land acquisition costs involved in this project. The total 01 Lands and damages estimate is limited to the administrative costs discussed above.

Estates

Lock site - The U.S.A. as part of the existing Greenup Locks and Dam project and the navigational servitude currently has real estate real estate rights required for the construction, operation, and maintenance of the lock extension. Construction will either take place on existing U.S.A. fee lands or within the navigational servitude.

Mitigation Areas - Much of the real estate required for mitigation is on existing U.S.A. lands. All real estate required for the T-dike and embayment mitigation features of the project (See the Environmental, Mitigation Issues section above) is located within the navigational servitude. All construction will take place within that servitude below the Ordinary High Water line. In so much as these mitigation requirements are directly related to the proposed lock extension no rights beyond the servitude are proposed to be acquired.

Method of Acquisiton

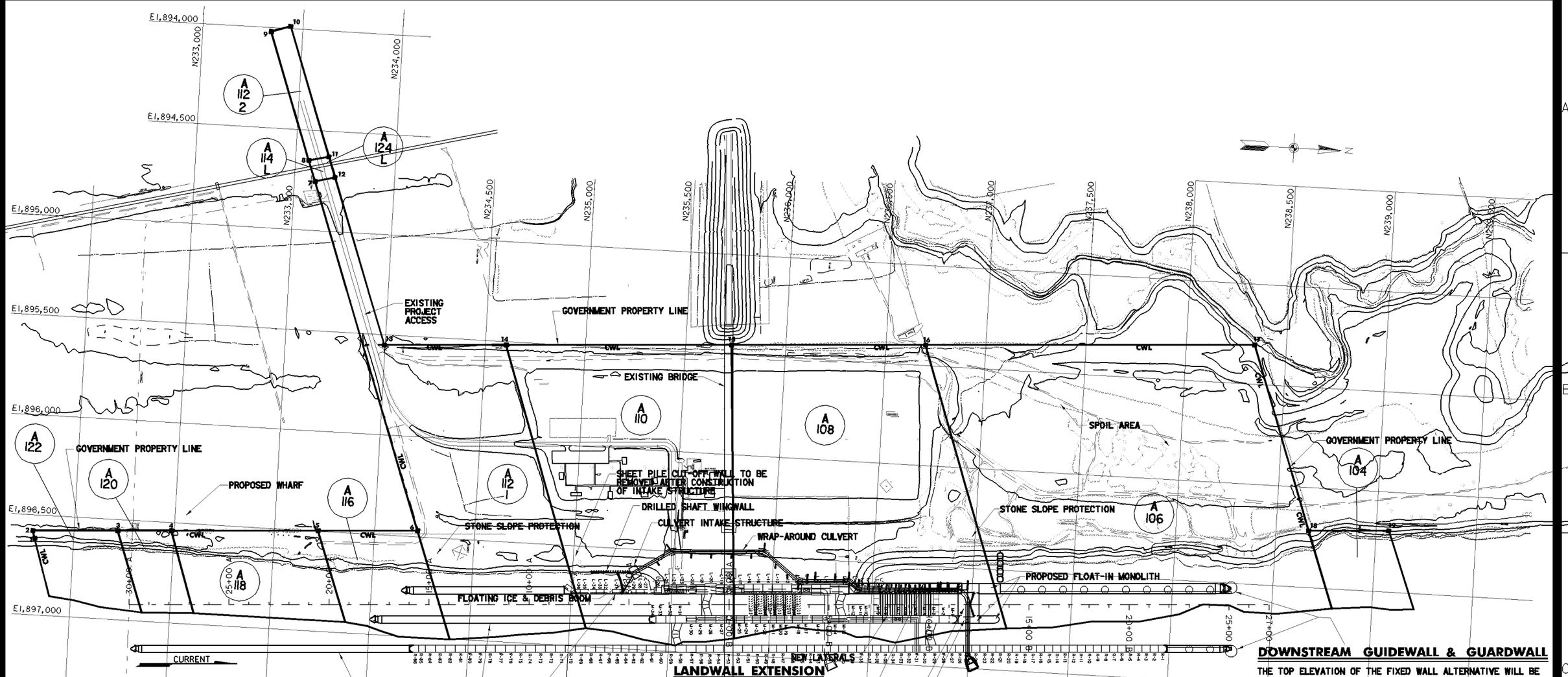
No real estate acquisition is identified as being required for this lock extension project. The issue of sponsor real estate capabilities is not applicable to this project. Section 102a of the Water Resources Act of 1986 does require that 50 percent of the total project cost, including

lands, easements, and rights-of-way (LER), be provided by the Inland Waterway Trust Fund; however, this does not include the requirement to provide LER.

There is no known opposition to this project. There is strong support for the project by the navigation industry.

Schedule of Acquisition

A supplemental REDM will be prepared during the PED phase of the project. Real estate will be certified following a review of final project plans and approval of that REDM.



UPSTREAM GUARD WALL

WALL IS AN EXTENSION TO THE UPPER RIVER WALL.

WALL WILL BE CONSTRUCTED OF PRESTRESSED CONCRETE BOX SECTIONS DESIGNED TO FLOAT AND WITHSTAND ALL IMPACT AND SEISMIC DESIGN FORCES.

WALL WILL BE DESIGNED TO ACCOMMODATE ALL WATER LEVELS ANTICIPATED AT THE SITE.

FLOATING WALL SHALL BE DESIGNED FOR A MINIMUM DRAFT OF 3 FEET AND A MINIMUM FREEBOARD OF 9 FEET.

FLOW SKIRTS WILL BE DESIGNED TO PROVIDE FLOW RESTRICTION TO ELEVATION 500.0.

UPSTREAM GUIDE WALL

WALL WILL BE CONSTRUCTED OF PRESTRESSED CONCRETE BOX SECTIONS DESIGNED TO FLOAT AND WITHSTAND ALL IMPACT AND SEISMIC DESIGN FORCES.

WALL WILL BE DESIGNED TO ACCOMMODATE ALL WATER LEVELS ANTICIPATED AT THE SITE.

FLOATING WALL WILL BE DESIGNED FOR A MINIMUM DRAFT OF 3 FEET AND A MINIMUM FREEBOARD OF 9 FEET.

FLOW SKIRTS WILL BE DESIGNED TO PROVIDE FLOW RESTRICTION TO ELEVATION 500.0.

LANDWALL EXTENSION

THE LANDWALL EXTENSION WILL BE DESIGNED TO BE CONSTRUCTED AS FLOAT-IN CONCRETE STRUCTURES.

WALL DEMOLITION

THE UPSTREAM AND DOWNSTREAM ENDS OF THE EXISTING LANDWALL WILL BE REMOVED.

1. FROM STATION 6+00 B TO STATION 8+03.3 B ON THE DOWNSTREAM END (MONOLITHS L-1 THROUGH L-5). (IF THE PRECAST OR FLOATIN MONLITHS ARE USED.)

2. FROM STATION 5+04 A TO STATION 8+23.3 A ON THE UPSTREAM END (MONOLITHS L-30 THROUGH L-37).

ADDITIONAL FILLING/EMPTING SYSTEM

THE ADDITIONAL FILLING AND EMPTYING SYSTEM WILL CONSIST OF:

1. CONCRETE INTAKE
2. WINGWALLS
3. REINFORCED CONCRETE CULVERT
4. FILLING VALVE STRUCTURE LOCATED IN THE ESPLANADE
5. FILLING CULVERT VALVE
6. CULVERT IN THE NEW MONOLITHS
7. CONCRETE LATERALS IN THE LOCK CHAMBER
8. EMPTYING CULVERT VALVE IN THE NEW LAND WALL STRUCTURE
9. CONCRETE OUTLET LOCATED RIVERWARD OF THE EXISTING RIVER WALL.

DOWNSTREAM MIDDLE WALL

WALL EXTENSION WILL BE PRECAST FLOAT-IN CONCRETE STRUCTURES.

THE EXTENSION WILL CONNECT TO THE EXISTING DOWNSTREAM END OF THE MIDDLE WALL (STATION 11+41 B) AND WILL EXTEND TO STATION 12+70 B.

THE EXTENDED WALL WILL BE CAPABLE OF ACCOMODATING WALL ARMOR, LINEHOOKS AND CHECKPOSTS, FLOATING MOORING BITTS, EMBEDDED METALS AND A PIPE TRENCH.

GATE BAY

THE ADDITIONAL DOWNSTREAM GATE BAY WILL CONSIST OF PRECAST CONCRETE STRUCTURES WHICH CAN BE FLOATED IN PLACE.

THE PINTLE FOR THE DOWNSTREAM MITER GATE WILL BE LOCATED AT STATION 12+20 B.

THE ADDITIONAL DOWNSTREAM MITER GATE BAY WILL BE CAPABLE OF ACCOMODATING THE EXISTING DOWNSTREAM MITER GATES AND OPERATING EQUIPMENT.

THE SIZE AND GEOMETRY OF THE MITER GATE RECESS AND MACHINERY RECESSES WILL BE THE SAME AS THE EXISTING RECESSES AND WILL BE CAPABLE OF ACCOMODATING A CONTROL STRUCTURE SIMILAR TO THE EXISTING.

THE ADDITIONAL DOWNSTREAM MITER GATE BAY WILL INCORPORATE A LOCK MAINTENANCE BULKHEAD RECESSES ON BOTH THE UPSTREAM AND DOWNSTREAM SIDE OF THE MITER GATES AND WILL BE CAPABLE OF ACCEPTING BULKHEADS TO PROVIDE FLOODING PROTECTION TO ELEVATION 512 WITH THE TOP OF THE BULKHEAD SILL BEING ELEVATION 470.

THE TOP OF THE MITER GATE SILL WILL BE AT ELEVATION 470 AND WILL BE AT ELEVATION 467 BETWEEN THE UPSTREAM LOCK BULKHEAD RECESS AND THE MITER LOCATION (SIMILAR TO THE EXISTING SILL).

THE SILL WILL INCORPORATE A DRY UTILITY CROSSOVER.

DOWNSTREAM GUIDEWALL & GUARDWALL

THE TOP ELEVATION OF THE FIXED WALL ALTERNATIVE WILL BE ELEVATION 537.0. THE BOTTOM ELEVATION OF THE FIXED WALL ALTERNATIVE WILL BE ELEVATION 482.0.

REAL ESTATE TOPOGRAPHICAL MAP
OHIO RIVER MAIN STEM STUDY

GREENUP LOCKS & DAM

OHIO RIVER
GREENUP COUNTY, KENTUCKY

200 0 200 400
SCALE IN FEET

SHEET 1 OF 1

REV. DATE: 6 MAR 99

EXHIBIT NO. B-1